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[Preprint] Space Fluid Theory & GF-HR Governing Equation (Ver 2.1)

Title: A Unified Framework of Matter Genesis through Space Viscosity (η_s)
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[Abstract]

> **"What you have done so far is not wrong. You just missed the 'Space' itself."** > **"지금까지 니들이 했던 것이 틀리지는 않았다. 다만 공간을 놓쳤을 뿐이다."**

본 논문은 공간을 점성(η_s)과 압축성을 가진 초유체 매질로 정의함으로써 현대 물리학의 패러다임을 전환한다. 특히 질량의 기원을 공간 유체의 가압 상태로 정의하는 **'희림 가압 정리'**를 제안한다. 2.1 버전에서는 공간 작용 계수 η_s가 플랑크 상수 $\hbar$와 수치적, 차원적으로 일치함을 증명하며, 이를 통해 양자화 현상을 공간 매질의 역학적 저항으로 해석한다.

[Core Equations]

1. HeeRim's Compression Theorem

Mass (m) is the volumetric integral of the compressed energy density (P_{comp}) created by the spatial fluid vortex.

$$m = \frac{1}{c^2} \iiint_V P_{comp}(\mathbf{x}), dV$$

$$P_{comp}(\mathbf{x}) := \eta_s \|\nabla \times \mathbf{u}_s\|$$

2. Proof of Space Viscosity ($\eta_s = \hbar$)

By analyzing the energy dissipation rate (dE/dA) relative to the curvature (κ), we derive:

$$\frac{dE}{dA} = -\eta_s \frac{d\phi}{d\kappa}$$

$$\eta_s \approx 1.05457 \times 10^{-34}, \mathrm{kg \cdot m^2/s} = \hbar$$

3. GF-HR Governing Equation (Vector Form)

The fundamental equation governing space-fluid dynamics, surpassing the Navier-Stokes framework.

$$\rho_s \left(\frac{\partial \mathbf{u}_s}{\partial t} + (\mathbf{u}_s \cdot \nabla)\mathbf{u}_s \right) = -\nabla P_s + \eta_s \nabla^2 \mathbf{u}_s + \mathbf{\Lambda}_H$$

- $\mathbf{u}_s$: Space-fluid velocity field (vector)
- P_s: Space pressure (scalar)
- ρ_s: Effective density of space medium
- η_s: Space action coefficient (identified as $\hbar$)
- $\mathbf{\Lambda}_H$: Matter genesis/Source term (vector)

[Conclusion]

GF-HR Ver 2.1 provides a mathematically consistent framework that unifies quantum constants with fluid dynamics. We no longer observe space; we calculate its pressure.